WH2CF 1.2 V1

NEW JERSEY HAZARDOUS SUBSTANCE FACT SHEETS

Topic: TURPENTINE

1.0 IDENTIFIERS

CAS Number: 8006-64-2
DOT Number: UN 1299

RTK Substance number: 1962
Date: January 1986

2.0 HAZARD SUMMARY

* Turpentine can affect you when breathed in and by passing through your skin.
* Exposure can irritate the eyes, nose and throat. Higher levels can cause headache, dizziness, nausea, confusion and rapid pulse. Still higher levels can cause kidney damage, convulsions and death.
* Contact can irritate and burn the eyes.
* Turpentine can cause a skin allergy to develop.
* Turpentine is a FLAMMABLE LIQUID and a FIRE HAZARD.

IDENTIFICATION

Turpentine is a colorless liquid with a characteristic odor. It is used as a solvent in paints, resins and waxes, and for making camphor, menthol, inks and many other products.

REASON FOR CITATION

* Turpentine is on the Hazardous Substance List because it is regulated by OSHA and cited by NIOSH, ACGIH, DOT and NFPA.
* This chemical is on the Special Health Hazard Substance List because it is FLAMMABLE.

HOW TO DETERMINE IF YOU ARE BEING EXPOSED

* Exposure to hazardous substances should be routinely evaluated. This may include collecting personal and area air samples. You can obtain copies of sampling results from your employer. You have a legal right to this information under OSHA 1910.20.
* If you think you are experiencing any work-related health problems, see a doctor trained to recognize occupational diseases. Take this Fact Sheet with you.

WORKPLACE EXPOSURE LIMITS

OSHA: The legal airborne permissible exposure limit (PEL) is 100 ppm averaged over an 8-hour workshift.
ACGIH: The recommended airborne exposure limit is 100 ppm averaged over an 8-hour workshift.

* The above exposure limits are for air levels only. When skin contact also occurs, you may be overexposed, even

though air levels are less than the limits listed above.

WAYS OF REDUCING EXPOSURE

* Where possible, enclose operations and use local exhaust ventilation at the site of chemical release. If local exhaust ventilation or enclosure is not used, respirators should be worn.
* Wear protective work clothing.
* Wash thoroughly immediately after exposure to Turpentine and at the end of the workshift.
* Post hazard and warning information in the work area. In addition, as part of an ongoing education and training effort, communicate all information on the health and safety hazards of Turpentine to potentially exposed workers.

This Fact Sheet is a summary source of information of all potential and most severe health hazards that may result from exposure. Duration of exposure, concentration of the substance and other factors will affect your susceptibility to any of the potential effects described below.

3.0 HEALTH HAZARD INFORMATION

Acute Health Effects

The following acute (short-term) health effects may occur immediately or shortly after exposure to Turpentine:

* Exposure can irritate the eyes, nose and throat. Higher levels can cause headaches, dizziness, nausea, confusion and rapid pulse. Still higher levels can cause trouble breathing, kidney and bladder damage (possibly with bloody urine), convulsions and death.
* Contact can irritate and burn the eyes.

Chronic Health Effects

The following chronic (long-term) health effects can occur at some time after exposure to Turpentine and can last for months or years:

Cancer Hazard

* According to the information presently available to the New Jersey Department of Health, Turpentine has not been tested for its ability to cause cancer in animals.

Reproductive Hazard

* According to the information presently available to the New Jersey Department of Health, Turpentine has not been tested for its ability to affect reproduction.

Other Long-Term Effects
* Turpentine may cause a skin allergy. If allergy develops, very low future exposures can cause itching and a skin rash.
* Repeated exposures can damage the kidneys and bladder.
* Prolonged or repeated contact can irritate the skin and may cause a rash.
* Turpentine may damage the nervous system.

MEDICAL

Medical Testing
If symptoms develop or overexposure is suspected, the following may be useful:
* Kidney function tests.
* Evaluation by a qualified allergist, including careful exposure history and special testing, may help diagnose skin allergy.
* Interview for brain effects, including recent memory, mood (irritability, withdrawal), concentration, headaches, malaise and altered sleep patterns. Consider cerebellar, autonomic and peripheral nervous system evaluation. Positive and borderline individuals should be referred for neuropsychological testing.

Any evaluation should include a careful history of past and present symptoms with an exam. Medical tests that look for damage already done are not a substitute for controlling exposure.
Request copies of your medical testing. You have a legal right to this information under OSHA 1910.20.

WORKPLACE CONTROLS AND PRACTICES
Unless a less toxic chemical can be substituted for a hazardous substance, ENGINEERING CONTROLS are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure. Using respirators or protective equipment is less effective than the controls mentioned above, but is sometimes necessary.
In evaluating the controls present in your workplace, consider: (1) how hazardous the substance is, (2) how much of the substance is released into the workplace and (3) whether harmful skin or eye contact could occur. Special controls should be in place for highly toxic chemicals or when significant skin, eye, or breathing exposures are possible.
In addition, the following control is recommended:
* Where possible, automatically pump liquid Turpentine from

drums or other storage containers to process containers.
Good WORK PRACTICES can help to reduce hazardous exposures.
The following work practices are recommended:
* Workers whose clothing has been contaminated by Turpentine should change into clean clothing promptly.
* Contaminated work clothes should be laundered by individuals who have been informed of the hazards of exposure to Turpentine.
* Eye wash fountains in the immediate work area should be provided for emergency use.
* On skin contact with Turpentine, immediately wash or shower to remove the chemical. At the end of the workshift, wash any areas of the body that may have contacted Turpentine, whether or not known skin contact has occurred.
* Do not eat, smoke, or drink where Turpentine is handled, processed, or stored, since the chemical can be swallowed. Wash hands carefully before eating or smoking.

4.0 PERSONAL PROTECTIVE EQUIPMENT

WORKPLACE CONTROLS ARE BETTER THAN PERSONAL PROTECTIVE EQUIPMENT. However, for some jobs (such as outside work, confined space entry, jobs done only once in a while, or jobs done while workplace controls are being installed), personal protective equipment may be appropriate.
The following recommendations are only guidelines and may not apply to every situation.

Clothing

* Avoid skin contact with Turpentine. Wear protective gloves and clothing. Safety equipment suppliers/ manufacturers can provide recommendations on the most protective glove/clothing material for your operation.
* All protective clothing (suits, gloves, footwear, headgear) should be clean, available each day, and put on before work.
* ACGIH recommends Polyvinyl Alcohol as a protective material.

Eye Protection

* Wear splash-proof chemical goggles and face shield when working with liquid , unless full facepiece respiratory protection is worn.

Respiratory Protection

IMPROPER USE OF RESPIRATORS IS DANGEROUS. Such equipment should only be used if the employer has a written program that takes into account workplace conditions, requirements for worker training, respirator fit testing and medical exams, as described in OSHA 1910.134.
* Where the potential exists for exposures over 100 ppm, use a MSHA/NIOSH approved full facepiece respirator with an

organic vapor cartridge/canister. Increased protection is obtained from full facepiece powered air purifying respirators.

* If while wearing a filter, cartridge or canister respirator, you can smell, taste, or otherwise detect Turpentine, or in the case of a full facepiece respirator you experience eye irritation, leave the area immediately. Check to make sure the respirator-to-face seal is still good. If it is, replace the filter, cartridge, or canister. If the seal is no longer good, you may need a new respirator.
* Be sure to consider all potential exposures in your workplace. You may need a combination of filters, prefilters, cartridges, or canisters, to protect against different forms of a chemical (such as vapor and mist) or against a mixture of chemicals.
* Where the potential for high exposures exists, use a MSHA/NIOSH approved supplied-air respirator with a full facepiece operated in the positive pressure mode or with a full facepiece, hood, or helmet in the continuous flow mode, or use a MSHA/NIOSH approved self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive pressure mode.
* Exposure to 1,900 ppm is immediately dangerous to life and health. If the possibility of exposure above 1,900 ppm exists use a MSHA/NIOSH approved self contained breathing apparatus with a full facepiece operated in continuous flow or other positive pressure mode.

5.0 QUESTIONS AND ANSWERS

Q: If I have acute health effects, will I later get chronic health effects?
A: Not always. Most chronic (long-term) effects result from repeated exposures to a chemical.

Q: Can I get long-term effects without ever having short-term effects?
A: Yes, because long-term effects can occur from repeated exposures to a chemical at levels not high enough to make you immediately sick.

Q: What are my chances of getting sick when I have been exposed to chemicals?
A: The likelihood of becoming sick from chemicals is increased as the amount of exposure increases. This is determined by the length of time and the amount of material to which someone is exposed.

Q: When are higher exposures more likely?

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A: Conditions which increase risk of exposure include dust releasing operations (grinding, mixing, blasting, dumping, etc.), other physical and mechanical processes (heating, pouring, spraying, spills and evaporation from large surface areas such as open containers), and "confined space" exposures (working inside vats, reactors, boilers, small rooms, etc.).

Q: Is the risk of getting sick higher for workers than for community residents?

A: Yes. Exposures in the community, except possibly in cases of fires or spills, are usually much lower than those found in the workplace. However, people in the community may be exposed to contaminated water as well as to chemicals in the air over long periods. Because of this, and because of exposure of children or people who are already ill, community exposures may cause health problems.

The following information is available from:

New Jersey Department of Health
Occupational Health Service Trenton, NJ 08625-0360 (609) 984-1863

Industrial Hygiene Information
Industrial hygienists are available to answer your questions regarding the control of chemical exposures using exhaust ventilation, special work practices, good housekeeping, good hygiene practices, and personal protective equipment including respirators. In addition, they can help to interpret the results of industrial hygiene survey data.

Medical Evaluation
If you think you are becoming sick because of exposure to chemicals at your workplace, you may call a Department of Health physician who can help you find the services you need.

Public Presentations
Presentations and educational programs on occupational health or the Right to Know Act can be organized for labor unions, trade associations and other groups.

Right to Know Information Resources
The Right to Know Infoline (609) 984-2202 can answer questions about the identity and potential health effects of chemicals, list of educational materials in occupational health, references used to prepare the Fact Sheets, preparation of the

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Right to Know survey, education and training programs, labeling requirements, and general information regarding the Right to Know Act. Violations of the law should be reported to (609) 984-5627.

DEFINITIONS

ACGIH is the American Conference of Governmental Industrial Hygienists. It recommends upper limits (called TLVs) for exposure to workplace chemicals.

A carcinogen is a substance that causes cancer.

The CAS number is assigned by the Chemical Abstracts Service to identify a specific chemical.

A combustible substance is a solid, liquid or gas that will burn.

A corrosive substance is a gas, liquid or solid that causes irreversible damage to human tissue or containers.

DEPE is the New Jersey Department of Environmental Protection and Energy.

DOT is the Department of Transportation, the federal agency that regulates the transportation of chemicals.

EPA is the Environmental Protection Agency, the federal agency responsible for regulating environmental hazards.

A fetus is an unborn human or animal.

A flammable substance is a solid, liquid, vapor or gas that will ignite easily and burn rapidly.

The flash point is the temperature at which a liquid or solid gives off vapor that can form a flammable mixture with air.

HHAG is the Human Health Assessment Group of the federal EPA.

IARC is the International Agency for Research on Cancer, a scientific group that classifies chemicals according to their cancer-causing potential.

A miscible substance is a liquid or gas that will evenly dissolve in another.

mg/m3 means milligrams of a chemical in a cubic meter of air. It is a measure of concentration (weight/volume).

MSHA is the Mine Safety and Health Administration, the federal agency that regulates mining. It also evaluates and approves respirators.

A mutagen is a substance that causes mutations. A mutation is a change in the genetic material in a body cell. Mutations can lead to birth defects, miscarriages, or cancer.

NCI is the National Cancer Institute, a federal agency that determines the cancer-causing potential of chemicals.

NFPA is the National Fire Protection Association. It classifies substances according to their fire and explosion hazard.

NIOSH is the National Institute for Occupational Safety and Health. It tests equipment, evaluates and approves respirators, conducts studies of workplace hazards, and proposes standards to OSHA.

NTP is the National Toxicology Program which tests chemicals and reviews evidence for cancer.

OSHA is the Occupational Safety and Health Administration, which adopts and enforces health and safety standards.

ppm means parts of a substance per million parts of air. It is a measure of concentration by volume in air.

A reactive substance is a solid, liquid or gas that releases energy under certain conditions.

A teratogen is a substance that causes birth defects by damaging the fetus.

TLV is the Threshold Limit Value, the workplace exposure limit recommended by ACGIH.

The vapor pressure is a measure of how readily a liquid or a solid mixes with air at its surface. A higher vapor pressure indicates a higher concentration of the substance in air and therefore increases the likelihood of breathing it in.

6.0 EMERGENCY INFORMATION

Common Name: TURPENTINE

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DOT Number: UN 1299
DOT Emergency Guide code: 27
CAS Number: 8006-64-2

Hazard rating	NJ DOH	NFPA
FLAMMABILITY	-	3
REACTIVITY	-	0
DO NOT USE WATER POISONOUS GASES ARE PRODUCED IN FIRE CONTAINERS MAY EXPLODE IN FIRE		

Hazard Rating Key: 0=minimal; 1=slight; 2=moderate; 3=serious; 4=severe

FIRE HAZARDS

* Turpentine is a flammable liquid.
* Use dry chemical, CO2, or foam extinguishers.
* POISONOUS GASES ARE PRODUCED IN FIRE.
* CONTAINERS MAY EXPLODE IN FIRE.
* DO NOT USE WATER.
* Vapors may travel to a source of ignition and flash back.
* If employees are expected to fight fires, they must be trained and equipped as stated in OSHA 1910.156.

SPILLS AND EMERGENCIES

If Turpentine is spilled or leaked, take the following steps:

* Restrict persons not wearing protective equipment from area of spill or leak until cleanup is complete. Vapor build-up may cause suffocation.
* Ventilate the area of spill or leak.
* Absorb liquids in vermiculite, dry sand, earth, or a similar material and deposit in sealed containers.
* Keep Turpentine out of a confined space, such as a sewer, because of the possibility of an explosion, unless the sewer is designed to prevent the build-up of explosive concentrations.
* It may be necessary to contain and dispose of Turpentine as a HAZARDOUS WASTE. Contact your Department of Environmental Protection (DEP) or your regional office of the federal Environmental Protection Agency (EPA) for specific recommendations.

FOR LARGE SPILLS AND FIRES immediately call your fire department. You can request emergency information from the following:

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CHEMTREC: (800) 424-9300
NJDEPE HOTLINE: (609) 292-7172 Other:

HANDLING AND STORAGE

* Prior to working with Turpentine you should be trained on its proper handling and storage.
* Store in tightly closed containers in a cool, well-ventilated area away from OXIDIZERS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, and NITRATES).
* Sources of ignition, such as smoking and open flames, are prohibited where Turpentine is used, handled, or stored in a manner that could create a potential fire or explosion hazard.
* Metal containers involving the transfer of 5 gallons or more of Turpentine should be grounded and bonded. Drums must be equipped with self-closing valves, pressure vacuum bungs, and flame arresters.
* Use only non-sparking tools and equipment, especially when opening and closing containers of Turpentine.

FIRST AID

In NJ, POISON INFORMATION 1-800-962-1253 Other:

Eye Contact

* Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting upper and lower lids. Seek medical attention immediately.

Skin Contact

* Quickly remove contaminated clothing. Immediately wash contaminated skin with large amounts of soap and water.

Breathing

* Remove the person from exposure.
* Begin rescue breathing if breathing has stopped and CPR if heart action has stopped.
* Transfer promptly to a medical facility.

PHYSICAL DATA

Vapor Pressure: 5 mm Hg at 68 degrees F (20 degrees C) Flash Point: 95 degrees F (35 degrees C) Water Solubility: Insoluble

OTHER COMMONLY USED NAMES

Oil of Turpentine; Spirits of Turpentine; Gum Turpentine; Wood Turpentine

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NEW JERSEY DEPARTMENT OF HEALTH
Right to Know Program CN 368, Trenton, NJ 08625-0368 (609) 984-2202

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